

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| In re Application of: | Bartenbach et al. | Docket No.:       | 54395 |
| Application No.:      | 10/806,232        | Examiner:         | BOYER |
| Filed:                | 3/23/2004         | Art Unit:         | 1764  |
| Customer No.:         | 26474             | Confirmation No.: | 9664  |

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For: Process for the scale-up of a reactor for carrying out a high-temperature reaction,  
reactor and use

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Honorable Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

REPLY BRIEF UNDER 37 C.F.R. §41.41

Sir:

This is a Reply Brief to the Examiner's Answer of August 14, 2008. Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account 14.1437. Please credit any excess fees to such account.

Status of Claims:

Claims 1 – 18 and 20 – 24 are pending in the application. Claims 1 – 18 and 20 – 24 are rejected. Claims 1 – 18 and 20 – 24 are being appealed. No claims have been withdrawn from consideration. Claim 19 is canceled.

Grounds of Rejection to be Reviewed on Appeal:

Whether the Office action erred in rejecting:

- I. claims 1 – 13 and 18 – 22 under 35 U.S.C. §102(b) over US 4,765,964 to Gravley (hereinafter, “Gravley”);
- II. claim 23 under 35 U.S.C §103(a) over Gravley or over Gravley in view of US 5,188,806 to Kuehner (hereinafter, “Kuehner”); and
- III. claims 14 – 18 and 24 under 35 U.S.C §103(a) over Gravley in view of US 3,640,739 to Bakker (hereinafter, “Bakker”).

Note: The rejection of claims 3, 13 – 19 and 24 on the grounds of nonstatutory obviousness-type double patenting over claims 1 – 7 of US 6,869,279 has been withdrawn as stated in the Examiner’s Interview Summary of June 04, 2008.

Arguments

Appellants respectfully reassert the arguments made in the Appeal Brief filed June 24, 2008, and present the following arguments in response to the Examiner’s Answer of August 14, 2008.

The claims require the transition from a reactor chamber to a quench area to be designed in the form of an “annular gap.” Appellants have asserted that “[t]he specification acts as a dictionary when it expressly defines terms used in the claims or

when it defines terms by implication.”<sup>1</sup> Appellants have also asserted that the terms “gap,” and “annular gap” have been so defined. In response, page 10, lines 13 – 15 of the Examiner’s Answer asserts that Appellants have improperly read limitations from a preferred embodiment into the claims. It seems that some confusion may have arisen.

First, the Examiner’s Answer only addresses the term “gap,” but the claims require an “annular gap.” If the word “annular” is alleged to have been improperly read into the claims, then further discussion is not necessary, as the claims specifically require an “annular gap.”

Second, appellants respectfully submit that claim limitations are not being read into the claims. To the contrary, appellants have pointed out that certain terminology used in the claims is defined in the specification.

Third, page 10, lines 13 – 15 of the Examiner’s answer asserts, “it is improper to read limitations from a preferred embodiment described in the specification into the claims absent a clear indication that the patentee intended the claims to be so limited.” Yet, Appellants have clearly indicated that the terms “gap,” and “annular gap,” as defined, illustrated, and explicitly contrasted to a cylindrical geometry, require more than a mere cylindrical geometry. Thus, it is improper for the “Examiner [to] construe[] Appellant’s ‘gap’ to be synonymous with ‘a break or opening’ or ‘an empty space or interval’ designed in the form of an annulus.”<sup>2</sup> Furthermore, Appellants respectfully note that an “annulus” is a ring-shaped opening, and not merely a cylindrical opening.

The Advisory action maintained the present rejection on the basis that, “generally annularly shaped end wall 46 which extends from the downstream end of the throat 34 to the upstream end of pyrolysis zone sidewall 48 [and upstream of quench means 56]”<sup>3</sup> clearly meets the presently claimed annular gap. Appellants asserted, and now respectfully reassert that Gravley does not disclose a transition from a reactor chamber to a quench area designed in the form of an annular gap. On page 12, lines 7 – 13 the

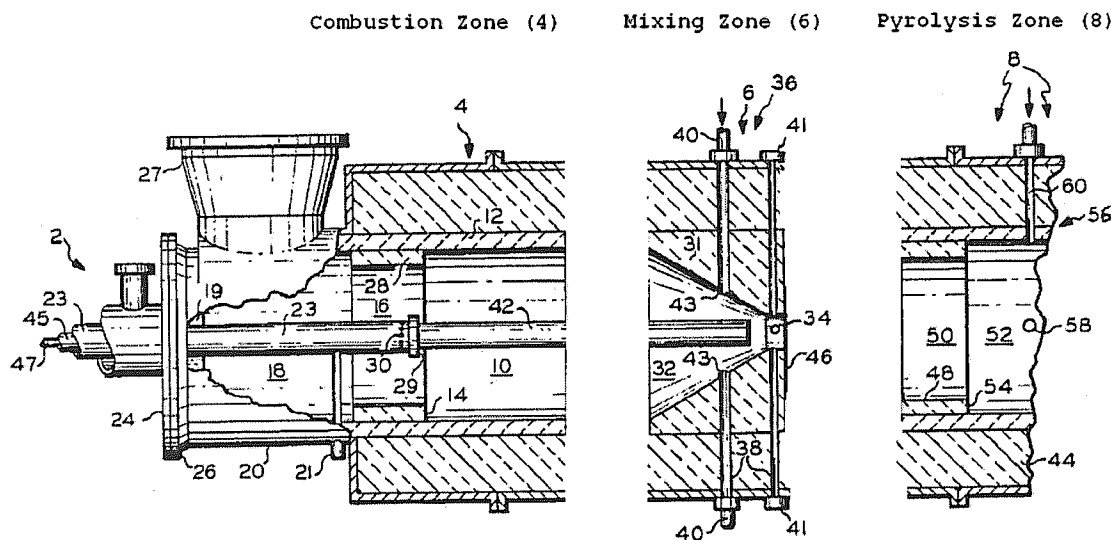
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<sup>1</sup> *Vitronics Corp. v. Conceptoronic, Inc.* 90 F.3d 1576, 1582, C.A.Fed. (N.H.), 1996, citing *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979, 34 USPQ2d 1321, 1330 (Fed.Cir.1995) (in banc) (emphasis added).

<sup>2</sup> Examiner’s Answer, page 11, lines 4 – 5.

<sup>3</sup> Page 2, Section #1 of the Advisory action mailed April 02, 2008, (quoting Gravley, column 5, lines 63 – 66; and drawing), (emphasis added).

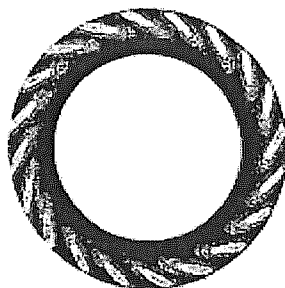
Examiner's Answer newly asserts that an annular gap is formed within combustion zone (4) between the distal end of injector assembly (42) and the converging combustion chamber (32). The zones of the Gravley reactor are illustrated in the following diagram.



First, Appellants respectfully note that the distal end of injector assembly (42) and the converging combustion chamber (32) are entirely within mixing zone (6). Thus, the alleged “annular gap” is not the transition from a reaction chamber to a quench area. Indeed, the alleged “annular gap” is not even at a point of transition from a reaction chamber to a quench area.

Second, even if the alleged “annular gap” were not located entirely within mixing zone (4) and was instead located at a point of transition from a reaction chamber to a quench area, it would not be the transition from a reaction chamber to a quench area. The alleged “annular gap” is formed from the distal end of injector assembly (42) and the converging combustion chamber (32). As stated in column 5, line 29 of Gravley, an axial feedstock passes through injector assembly (42). Thus, the injector assembly (42) provides a transition, and the alleged “annular gap” cannot be the transition.

This distinction between Gravley and the present invention, as well as the importance of this distinction can be understood from the portion of figure 4, reproduced below, where the annular gap provides the transition, i.e., no passage takes place through the center.



x = 550 mm

Portion of Figure 4.

Again, the specification explains, “[t]he gap-like, preferably annular gap-like geometry of the transition from the reaction chamber to the quench chamber makes possible jetting in of the quench medium, for example water or oil, either from one side of the gap or from both sides of the gap.”<sup>4</sup> The gap-like geometry also allows for scale enlargement without yield losses, because “the disadvantages of the enlargement of the cylindrical cross section with respect to the realizable quench action are avoided by changing from the cylindrical geometry to a gap-like geometry.”<sup>5</sup>

Finally, on page 14, lines 3 – 4, the Examiner’s Answer “interprets ‘channel’ to be synonymous with ‘passage,’ and ‘gap’ to be synonymous with ‘a break or opening’ or ‘an empty space or interval.’ Appellants respectfully submit that the claims do not merely require a reactor having a supply of a reaction mixture via channels. Instead, the claims require a reactor having a supply of a reaction mixture via channels of a burner block. On page 15, lines 1 – 7, the Examiner’s Answer seems to equate tubular member (23) to a burner block. Appellants respectfully submit that tubular member (23) is not a burner block.

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<sup>4</sup> Specification, page 3, lines 29 – 32 (emphasis added).

<sup>5</sup> Specification, page 3, lines 7 – 10.

In Conclusion:

Appellants submit the present application to be in condition for allowance.  
Favorable action is respectfully requested.

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Respectfully submitted,  
NOVAK DRUCE & QUIGG, LLP

A handwritten signature in black ink, reading "Michael P. Byrne". The signature is fluid and cursive, with the first name "Michael" and last name "Byrne" clearly legible.

Michael P. Byrne  
Registration No.: 54,015